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FORM PTO-1390 (REV. 11-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 12161-02	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5)	
				09/762807	
INTERNATIONAL APPLICATION NO. PCT/RU98/00384		INTERNATIONAL FILING DATE November 17, 1998		PRIORITY DATE CLAIMED August 11, 1998	
TITLE OF INVENTION GAME METHOD USING BETS, VARIANTS AND DEVICE FOR REALISING THE SAME					
APPLICANT(S) FOR DO/EO/US SILAEV, Alexandr I.					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> has been communicated by the International Bureau.</p> <p style="margin-left: 20px;">c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> is attached hereto.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p style="margin-left: 20px;">c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p style="margin-left: 20px;">d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> <p>Items 11 to 20 below concern document(s) or information included:</p> <p>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input type="checkbox"/> A FIRST preliminary amendment.</p> <p>14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input type="checkbox"/> Other items or information:</p>					

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21. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. \$1000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY	
				\$ 1000.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$	
Total claims	26 - 20 =	6	x \$18.00	\$ 108.00	
Independent claims	- 3 =		x \$80.00	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)				+ \$270.00	
TOTAL OF ABOVE CALCULATIONS =				\$ 1378.00	
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$ 689.00	
SUBTOTAL =				\$ 689.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
TOTAL NATIONAL FEE =				\$ 689.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +				\$	
TOTAL FEES ENCLOSED =				\$ 689.00	
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				charged: \$	

a. ☐ A check in the amount of \$ _____ to cover the above fees is enclosed.


b. ☒ Please charge my Deposit Account No. 11-0687 in the amount of \$ 689.00 to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☐ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. _____. A duplicate copy of this sheet is enclosed.

d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:



24035

PATENT TRADEMARK OFFICE

Eugene J.A. Gierczak

SIGNATURE

Eugene J.A. Gierczak

NAME

31,690

REGISTRATION NUMBER

**METHOD OF A WAGERING GAME (EMBODIMENTS)
AND APPARATUS THEREFOR**

FIELD OF THE INVENTION

The present invention relates to multi-user games and entertainment industry, in particular to methods and systems for running games and lotteries based on the principle of wagering on information elements of a designated game set.

BACKGROUND OF THE INVENTION

In a known television lottery game "Russkoje Loto", a game set of $N=90$ information elements is designated as a set of integers from 1 to 90, and registered lottery tickets carrying on an information bar with an individual, for every ticket, gambling combination of 30 information elements of the game set, are sold to players prior to the drawing process takes place. The aforementioned gambling combination is compiled in 6 lines each containing 5 elements, and these lines are divided into 2 groups each containing 3 lines. During TV-broadcast of the prize-drawing process, in which under computer supervision only sold tickets are taken into consideration, a game operator chooses successively and randomly numbers from the game set and informs of them the players who compare the chosen information elements - numbers with the numbers of the information bar carried on their tickets and mark in the code those numbers coinciding with the chosen numbers, should the coincidence occurs. The winning tickets are determined during several rounds of the prize fund drawing process: the first round winner is a ticket in which all 5 elements of any line are marked earlier than in other tickets, the second round winner is a ticket in which all 15 elements of one of the groups are marked earlier than in other tickets, the third and subsequent round winner is a ticket in which all 30 numbers of the gambling combination are marked earlier than in other tickets (see, Internet URL <http://www.rusloto.ru>).

In much the same way as in "Russkoje Loto", a prize fund drawing process is the basis for a known lottery game "Bingo" and its TV-versions (see, Internet URL <http://www.dux.ru/enpp/tv/bingo/rules.htm>).

The drawback with these games consists in that the players are deprived themselves of wagering and affecting the prize-drawing outcomes, since the wagers of each player are in fact predetermined by a unique gambling combination of information elements of a purchased ticket and the prize-drawing outcomes are fully dependent on actions of the game organizers. This drawback lowers the interest of potential participants in such games.

A known Russian lottery game "Sportloto" comprises designation of the game set as a table of $N=45$ information elements – integers from 1 to 45 (a "6 of 45" version) or a table of $N=36$ information elements – integers from 1 to 36 (a "5 of 36" version), distribution, among potential players, of lottery coupons carrying the game set on them in a form of the indicated tables and also a unique, for every coupon, identification data, entering by each player in the game set table of the lottery coupon of 6 marks about the wagers on 6 intentional information elements of the game set for the "6 of 45" version and 5 marks for the "5 of 36" version, return of the coupons with the marks about the wagers on them to the game organizer by a fixed time, registration of the returned coupons with the wager marks on them and a wager drawing at a predetermined TV-broadcast time in a process of random choosing a combination of winning elements from the game set, while indicating the money awards depending on the number of right guessed elements in the winning combination (Russian Federation Patent No. 2,023,307, 1994, G07C 15/00).

Players in this game wager themselves; however, a huge number of possible winning combinations provides an extremely low winning probability, which also lowers the interest to participate in the game. Indeed, in the "6 of 45" lottery version the overall number of possible winning combinations amounts to 8,145,060, while the first-category prize (all 6 numbers of the winning combination are guessed right) can be won by only one of them, the second-category prize (5 numbers of the winning combination are guessed right) – by 234 of them, the third-category prize (4 numbers of the winning combination are guessed right) – by 11,115 of them. In the "5 of 36" lottery version the overall number of possible winning combinations amounts to 376,992, while the first-category prize (all 5 numbers of the winning combination are guessed right) falls on one of them, the second-category prize (4 numbers of the winning combination are guessed right) – on 155 of them, the third-category prize (3 numbers of the winning combination are guessed right) – on 4,650 of them. Moreover, the wagers of the game players do not affect in any way the prize-drawing process, which does not promote the attractiveness of the game.

Another drawback with the "Sportloto" lottery consists in the organization complexity of its running, due to necessity to produce a large number of lottery coupons, their sale to the population, mail of marked coupons back over large distances, sorting of received coupons by draws, recognition of hand-written characters, and all that has to be done at extra risks of fraud coupons distribution and/or fraud actions of some employees among the considerable number of those involved in this process.

The influence of the aforementioned factors of the organization complexity of running "Sportloto"-like lotteries becomes lower in the state lotteries run in the USA and Canada, in which generally the same principle of wagering and wager drawing is realized by means of lottery coupons distribution and wager registration using remote electronic terminals at lottery retail outlets, said

terminals transmitting via telephone networks to a host computer signals with information on sold coupons and their wager marks (US Patent No. 5,186,463, 1993, A63F 3/06). Analogous technical means are used in a Russian electronic lottery "Lotto Million" with weekly prize-drawings through a national Russian TV channel.

To simplify the process of lottery running and, in particular to reduce a volume paper documents processed, a computerized telephone game system has been invented on the basis of a touch-tone telephone set and a host computer, which by means of ramified algorithm and a set of various prerecorded voice messages provides callers with: registration as game players identified by personal identification numbers (PINs), game credits purchase via credit cards, wager enter and registration of virtual game coupons associated with the wagers (US Patent No. 5,415,416, 1995, A63F 9/22). This technical solution also provides for the integration of the host computer with a caller's phone number identification unit and a billing software for charging the identified phone numbers, which makes the system accessible to players without credit cards. In accordance with the patent specification, the system is designed for running lotteries with registration of combinations of numbers selected from predetermined sets of numbers as wagers until the beginning of the prize-drawing process by means of random choosing the winning combinations by the game organizer; in so doing, on players' request the system itself can randomly wager on behalf of the player.

There is also known a method of a telephone lottery wagering game "Indexloto 10 out of 10" comprising on-the-phone registration by players (until the beginning of drawing) of game indexes consisting of non-repeating digits (Russian Federation Patent No. 2,053,827, 1996, A63F 3/06). At a predetermined time, the game organizer carries out the prize-drawing by means of random choice of a winning sequence of 10 non-repeating digits. The prize fund is allocated among the players whose registered indexes fully or in part (6 or more digits) coincide with the winning sequence; in so doing, the wager charging procedure is similar to that used for charging phone number holders for telecommunication. In this game, the overall number of various combinations equaled 3,628,800 give rise to its high potential yield for organizers, but fails to stimulate raise in interest of potential players, thus leaving the game on the same playing interest level as "Sportloto"-type lotteries.

In comparison with lotteries using lottery coupons, computerized telephone games are not only more simple from the point of view of the game process organization but are more attractive to potential players because of accessibility of the telephony.

The closest prior art with respect to the subject matter of the present invention has been described in a wagering game method implemented in the Canadian state lottery "6 of 49", which enables participation (apart from buyers of lottery coupons at remote electronic terminals) to any user of the international computer network Internet having at least one of the worldwide accepted credit cards for paying his or her wagers and receiving possible wins (Internet resource

<http://www.cimltd.com/lotto>). In this game, the game set of $N=49$ elements is designated in a central game computer as a set of N non-repeating information codes each being the binary code of one of the integers from 1 to 49. Everyone who wishes to participate in the game, via the Internet telecommunication lines on his or her personal computer, receives signals carrying information about the players' registration form and possible versions of charging the wager costs. Filled-in registration forms with marked payment options are returned as a set of signals through the Internet channels to the central computer and, when verified, recorded to the long-term memory for further identification of players and charging of wager costs. Thereupon, signals carrying information about the game set elements and also information about scheduled game rounds in which the wager drawing will be run, are transmitted from the central game computer to the personal computer of a registered player. From this information, every player chooses a combination of 6 elements as his or her wagers and, before the next round begins, transmits via the Internet channels to the central game computer signals identifying the given player and carrying information about his or her wagers. In the host computer, signals received from the players are identified, registered and memorized while charging the players who have sent the signals. When it is time to begin the next game round, registration of signals with wagers for that round ceases and the game organizer chooses randomly from the game set 6 elements which will make up a winning combination. Thereupon, the recorded signals with wager information are compared with the information codes of the winning combination, which results in the recognition of signals containing information about 4 and more wagers of the winning combination and identification of players who have placed those wagers and among whom the prize fund, as part of the total game round budget collected from the payment of wagers, is allocated in accordance with the game regulations.

Despite the technical attractiveness of the wagering game method embodied in this closest prior art, this method, from the point of view of principles constituting the basis of wager drawing, is similar to the "Sportloto" lottery and therefore possesses the same basic disadvantages.

As a result of analyzing the current situation in the industry of multi-user games and lotteries with wagers on information elements of game sets, common disadvantages may consist both in their redundant multiplicity of possible variants of a winning combination, thus causing a rare probability of a large win, and the complete exclusion of players from the process of forming the winning information elements. These disadvantages lower the playing attractiveness of the games, cause mistrust of some potential players towards the organizers and, besides, call forth the lack of sporting and intellectual competitive strength with the aforementioned multi-user games.

SUMMARY OF THE INVENTION

The present invention addresses the task of expanding the arsenal of technical solutions related to methods and apparatuses for running wagering games. In comparison with the known methods and apparatuses of similar purpose, the claimed invention enables qualitative increase in the game entertainment level and provides dependence of the drawing outcomes upon the actions of players, thus increasing the attractiveness of the games to potential players and, moreover, enables such games to feature sporting and intellectual competition attributes.

The indicated result is achieved in a wagering game method which comprises forming of a game set of $N > 1$ information elements by means of generation of a set of N non-repeating information codes in a computer memory, propagation, among the players through communication lines, of signals carrying information about the game set elements, selection by every player of one of the game set elements as a wager, forwarding, through feedback communication lines, of signals which identify the players and carry information about the wagers, identification and registration of signals received through feedback lines, forming of a wager payment data, a wager drawing within playing rounds, wherein signals carrying wager information are registered as a sequence of signals in the order of signal arrival through feedback lines, said sequence is kept hidden from the players until the playing round is completed, and the wager drawing is carried out by means of an iterative-analytical process of forming a quantitative wager distribution among the game set elements, said process is kept hidden from the players until the playing round is completed, and within every iteration of the said process a regular signal of a registered signal sequence is correlated with the information code of the game set element selected as a wager by the player, the number of signals correlated with the information code of the game set element within the current playing round is determined, observation of conditions of a wager drawing end is checked, and a wager drawing is completed as soon as the said conditions are observed, and in the presence of registered wager information carrying signals not processed by the iterative-analytical wager drawing process before the completion of the current playing round the said signals are processed by the iterative-analytical wager drawing process within one of the next rounds.

Distinctive features of the iterative-analytical wager drawing process which differ one particular embodiment of the presently claimed method from another and consist in the conditions of completion of the iterative-analytical wager drawing process, affords a varying degree of attractiveness and profitableness of the game for both players and organizers.

The simplest modification of the above-described embodiment of a wagering game method is a method in which within every iteration of a wager drawing process, or starting with the N iteration, information codes are revealed with which no signal has been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the processing of a signal containing information about a wager on the only game set element with whose information code no

signal has been correlated by the iterative-analytical process within the current playing round before the processing of this signal.

This particular embodiment of the wagering game method called "Force of Zero", when assigning the aforementioned only game set element to be a winner in the playing round completed, makes it possible to reveal a winner right after his or her wager is processed, that is from the point of view of players, it is the game with an instantaneous outcome of drawing their wagers, and enables, on the average, profitability of the game for its organizer when awarding a prize, up to the sum which is equal to the cost of N wagers.

Another embodiment of a wagering game method is a method according to which within every iteration of a wager drawing process, or starting with the $(2N-1)$ iteration, information codes are revealed with which only one signal has been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the presence of only one said information code and in the absence of information codes with which no signal has been correlated by the iterative-analytical process within the current playing round before the processing of this signal.

This particular embodiment of the wagering game method called "Force of Minimum", when placing the only game set element on which only one wager has been assigned to be a winner in the playing round completed, not always makes it possible to reveal a winner right after his or her wager is processed, since a wager on a winning game set element may be fixed in the quantitative distribution of wagers of the current playing round during several iterations before the completion of the iterative-analytical process, thereby resulting in a conclusion of players that such a game is the game with a postponed outcome of drawing their wagers. However, in virtue of a random character of the signal traffic with wagers, the budget of each round of a "Force of Minimum" game may not be lesser than the cost of $2N-1$ wagers, and the game organizer is able to assign a fixed prize in the amount of the sum total paid for N wagers with respect to the only wager won, while enabling his own profitability level of the game which is no less than $50\%(1-0.5N)$ of the total sum charged for wagers participating in the game.

Yet another embodiment of a wagering game method with wagers with $N > 2$ game set elements is the most attractive from the point of view of the playing interest and profitability for both players and organizers of the game. In that embodiment, within every iteration of a wager drawing process, or starting with the $2N$ iteration, information codes are revealed with which the minimum and the maximum number of signals have been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the presence of only one information code with which the minimum number of signals has been correlated within the current playing round, of only one information code with which the maximum number of signals has been correlated within the

current playing round, and in the absence of information codes with which no signal has been correlated within the current playing round.

This particular embodiment of the wagering game method called "Force of Minimax", when placing the only game set element on which the minimum number of wagers has been staked and/or the only game set element on which the maximum number of wagers has been staked to be a winner in the playing round completed, not always makes it possible to reveal a winner right after his or her wager is processed, since a wager on a winning game set element may be fixed in the quantitative distribution of wagers of the current playing round during several iterations before the completion of the iterative-analytical process, thereby resulting in a conclusion of players that such a game is the game with a postponed outcome of drawing their wagers. However, in case where a revealed global minimum of a total wager distribution is determined as the only winning game set element, it is possible that several winning wagers appear simultaneously, and the game organizer is able to assign a guaranteed minimum prize with respect to each winning wager in the amount of the sum total paid for N wagers, while enabling his or her own profitability level of the game which is no less than 50 % of the total sum charged for wagers participating in the game.

The solution of the aforementioned task with the achievement of a total result is also ensured in yet another embodiment of the above-disclosed wagering game method which comprises forming of a game set of $N > 1$ non-repeating information elements, propagation among the players of playing coupons carrying information about the contents of the game set information elements, entering of identification data onto the said coupons, marking of one of the game set information elements by every player as a wager selected, return of the coupons with the wager marks on them to effect wager drawing, registration of the returned coupons with marked wagers and wager drawings within playing rounds, wherein the coupons with the wager marks on them are registered as a sequence of coupons in the order of their return arrival, said sequence is kept hidden from the players until the playing round is completed, and the wager drawing is carried out by means of an iterative-analytical process of forming a quantitative wager distribution among the game set elements, said process is kept hidden from the players until the playing round is completed, and within every iteration of the said process a regular coupon of a registered coupon sequence is correlated with the game set information element selected as a wager by the player, the number of coupons correlated with each information element of the game set within the current playing round is determined, observation of conditions of a wager drawing end is checked, and the wager drawing is completed as soon as the said conditions are observed, and in the presence of registered coupons carrying wager marks which are not processed by the iterative-analytical wager drawing process before the completion of the current playing round, these coupons are processed by the iterative-analytical wager drawing process within one of the next rounds.

Particular cases of this embodiment of a wagering game method are respectively:

- A wagering game method called "Force of Zero", in which within every iteration of a wager drawing process, or starting with the N iteration, the game set elements are revealed with which no coupon has been correlated within the current playing round, and the wager drawing is completed with an iterative-analytical processing of a coupon containing a wager mark corresponding to the only game set element with which no coupon has been correlated within the current playing round before the processing of this coupon;

- A wagering game method called "Force of Minimum", in which within every iteration of a wager drawing process, or starting with the $(2N-1)$ iteration, the game set elements are revealed with which only one coupon has been correlated within the current playing round, and the wager drawing is completed in the presence of only one such element and in the absence in the game set of elements with which no coupon has been correlated within the current playing round;

- A wagering game method called "Force of Minimax", in which within every iteration of a wager drawing process, or starting with the $2N$ iteration, the game set elements are revealed with which the minimum and the maximum number of coupons have been correlated within the current playing round, and the wager drawing process is completed in the presence of only one element with which the minimum number of coupons has been correlated within the current playing round, of only one element with which the maximum number of coupons has been correlated within the current playing round, and in the absence in the game set of elements with which no coupon has been correlated within the current playing round.

The aforementioned particular cases of this embodiment of the wagering game method possess the same advantages as their corresponding particular cases of the embodiment described earlier.

A degree of influence of a player on the process and outcome of a particular game is increased in case where the both embodiments of the wagering game method are realized. In this case, on request of a player, he or she is provided with accumulated information about current quantitative wager distribution among the game set elements relating to an unfinished playing round, and the said information is presented to the player in exchange for a wager which is placed without his or her participation and processed by a wager drawing process out of turn.

The attractiveness of wagering games in their particular embodiments "Force of Minimum" and "Force of Minimax" is increased due to the fact that, on request of a player, before the completion of a playing round, signals or coupons containing a wager information which were received from the said player are withdrawn from a wager drawing process in the order opposite to that of their registration.

The present invention is also embodied in a wagering game apparatus intended for the implementation of the first of the above-described embodiments of the claimed method. Referring to FIG. 1, the wagering game apparatus comprises a game set forming unit (1) connected via data dissemination unit (2) to one of inputs of a processor (3) connected with its information output to a recognition and identification unit (4), a wager payment unit (5), a wager registration unit (6), a controller (7), a playing-logic unit (8), and a recording unit (9) which are connected in series, a playing-round counter (10) connected to the second input of the wager registration unit (6) and to the second output of the controller (7) connected with its second input to the output of the game set forming unit (1), a long-term memory unit (14) interconnected with the recognition and identification unit (4) and the wager payment unit (5), a timer (17) connected to the controller (7), the recognition and identification unit (4), the wager payment unit (5), and the recording unit (9). The apparatus also comprises a wager distribution processor (11) interconnected with the controller (7), a wager registration confirmation unit (12) connected to the input of the processor (3) and the second output of the wager registration unit (6), a payment registration unit (15) and an outcome review unit (16) which are interconnected with the long-term memory unit (14) and the processor (3) and also connected to corresponding outputs of the recognition and identification unit (4), the outputs of the recording unit (9) and the wager registration confirmation unit (12) being connected to corresponding inputs of the long-term memory unit (14).

To embody the wagering game method in its first embodiment which enables the players not to wager by themselves but to entrust the apparatus with this duty, the apparatus in accordance with the present invention additionally comprises a wager generator (13) interconnected with the recognition and identification unit (4) and also connected to the output of the game set forming unit (1).

To embody the wagering game method in its first embodiment which enables the players, on their request, to be provided with information about current quantitative wager distribution among the game set elements, the apparatus in accordance with the present invention additionally comprises a wager drawing display unit (18) coupled between an additional output of the controller (7) and an additional input of the processor (3).

To embody the wagering game method in its first embodiment which enables the players to withdraw their wagers from a wager drawing process in the games "Force of Minimum" and "Force of Minimax", the apparatus in accordance with the present invention additionally comprises a wager returning unit (19) interconnected with the controller (7) and the long-term memory unit (14) and also connected to an output of the recognition and identification unit (4) and an input of the input/output processor (3).

With reference to FIG. 2 showing the apparatus to carry out the wagering game method in its first embodiment called "Force of Zero", a wager distribution processor (11) comprises a decoder (20) connected with its outputs to driving inputs of flip-flops (21) which are connected with their outputs to inputs of a "logical AND" gate (22) connected with its output to reset inputs of the flip-flops (21).

A modification of the apparatus having such a wager distribution processor (11), while fully conforming to the game method "Force of Zero", is characterized in that it is simple to embody but fails to accumulate data about a precise quantitative wager distribution among the game set elements in the processor (11).

Additional possibilities to accumulate data about a precise quantitative wager distribution among the game set elements in the processor (11) of this particular case of implementation of the apparatus to carry out the wagering game method in its embodiment called "Force of Zero", and also to transfer, at any moment, this data to the controller (7) are solved in case where a wager distribution processor (11) interconnected with a controller (7) comprises a decoder (20) connected with its outputs to inputs of counters (23) whose outputs are connected, via comparison units (24), to inverse inputs of a "logical AND" gate (25) connected with its output to reset inputs of the counters (23) (see FIG. 3).

With reference to FIG. 4 showing the apparatus to carry out the wagering game method in its first embodiment called "Force of Minimum", a wager distribution processor (11) interconnected with a controller (7) comprises a decoder (20), each of N 1-bit outputs of the said decoder being coupled to a stage of a counter (23) and of a null-comparison unit (24) and a 1-comparison unit (27) which are connected in parallel to the said counter (23), a "logical AND" gate (25) with N inverse inputs each coupled to the output of the corresponding null-comparison unit (24), an "exclusive OR" gate (28) with N inputs each coupled to the output of the corresponding 1-comparison unit (27), a "logical AND" gate (29) with two inputs connected to outputs of the gates (25) and (28), and an encoder (30) with N inputs each coupled to the output of the corresponding 1-comparison unit (27), the said gate (29) being connected with its output to reset inputs of the counters (23) and to a control input of the encoder (30).

With reference to FIG. 5 showing the apparatus to carry out the wagering game method in its first embodiment called "Force of Minimax", a wager distribution processor (11) interconnected with a controller (7) comprises a decoder (20), each of N 1-bit outputs of the said decoder being coupled to a stage of a counter (23) and of a null-comparison unit (24), a minimum-comparison unit (31), and a maximum-comparison unit (32) which are connected in parallel to the said counter (23), a "logical AND" gate (25) with N inverse inputs each coupled to the output of the corresponding null-comparison unit (24), a first "exclusive OR" gate (28-1) with N inputs each coupled to the output of the corresponding minimum-comparison unit (31), a first "logical AND" gate (29-1) with two inputs

connected to outputs of the gates (25) and (28-1), a second "exclusive OR" gate (28-2) with N inputs each coupled to the output of the corresponding maximum-comparison unit (32), a second "logical AND" gate (29-2) with two inputs connected to outputs of the gates (29-1) and (28-2), a first encoder (30-1) with N inputs each coupled to the output of the corresponding minimum-comparison unit (31), a second encoder (30-2) with N inputs each coupled to the output of the corresponding maximum-comparison unit (32), a minimum-counter (33) coupled to the output of the gate (29-1), the said minimum-counter (33) being connected with its output to the input of each of minimum-comparison units (31), and a maximum-counter (34) coupled to the output of the gate (28-2), the said maximum-counter (34) being connected with its output to the input of each of maximum-comparison units (32), the said gate (29-2) being connected with its output to reset inputs of the counters (23), (33), (34), the said gate (29-1) being connected with its output to a control input of the first encoder (30-1), the said gate (28-2) being connected with its output to a control input of the second encoder (30-2).

BRIEF DESCRIPTION OF THE DRAWINGS

Other and further objects and advantages of the present invention will be apparent as the description thereof progresses, reference being had to accompanying drawings wherein:

FIG. 1 is a function circuit of a wagering game apparatus.

FIG. 2 is a function and logic circuit of a wager drawing processor (11) for a particular embodiment of an apparatus realizing a modification of a "Force of Zero" method, without accumulation in the processor (11) of absolute quantitative data about wager distribution among the game set elements.

FIG. 3 is a function and logic circuit of a wager drawing processor (11) for a particular embodiment of an apparatus realizing a modification of a "Force of Zero" method, with accumulation in the processor (11) of absolute quantitative data about wager distribution among the game set elements.

FIG. 4 is a function and logic circuit of a wager drawing processor (11) for a particular embodiment of an apparatus realizing a modification of a "Force of Minimum" method.

FIG. 5 is a function and logic circuit of a wager drawing processor (11) for a particular embodiment of an apparatus realizing a modification of a "Force of Minimax" method.

FIG. 6 shows an example of the diagram of a quantitative wager distribution among the game set elements formed by an iterative-analytical process for a wager drawing within an unfinished playing round according to a modification of a "Force of Minimax" method.

FIG. 7 shows an example of the diagram of a quantitative wager distribution among the game set elements formed by an iterative-analytical process for a wager drawing within a completed playing round according to a modification of a "Force of Minimax" method.

BEST MODE OF CARRYING OUT THE INVENTION

In the following description of an apparatus to carry out the first of the above-described embodiments of a wagering game method and modifications of an apparatus, when characterizing functional units, elements and a description of their operation, use is made of highly specialized terms and designations which are due to application tasks to be addressed by them. Structural elements and the description of operation of iterative-analytical processor units are set forth in more detail using terms of function and logic circuits accepted in digital electronics; in so doing, auxiliary, general-system and service tasks (conversion of data formats and commands, communications protocols, memory addressing, generation of system messages and commands, etc.) are only mentioned as needed to define more exactly functions of units when they address certain application tasks.

It should be understood that the invention is not limited to the scope of accepted terminology, and each term or designation used encompasses all equivalent elements and units operated in a similar way and used to perform the same functions.

A function circuit of a wagering game apparatus set forth in FIG. 1 comprises a game set forming unit (1) (the said set consisting of $N > 1$ game elements) which is connected, via a data dissemination unit (2), to an input/output processor (3). An information output of the processor (3) is connected to a recognition and identification unit (4), a wager payment unit (5), a wager registration unit (6), a controller (7), a playing-logic unit (8), and a recording unit (9) which are connected in series. A playing-round counter (10) is connected to the second input of the wager registration unit (6) and to the second output of the controller (7) interconnected (here and throughout the text the term "interconnected" is to be understood as the availability of communication lines for data exchange) with the game set forming unit (1). The second output of the wager registration unit (6) is connected, via a wager registration confirmation unit (12), to the processor (3).

An output of the game set forming unit (1) is also connected to a third input of the controller (7) and to a wager generator (13) interconnected with the recognition and identification unit (4). A long-term memory unit (14) is interconnected with the following units: the recognition and identification unit (4), the wager payment unit (5), a payment registration unit (15), an outcome review unit (16) which in turn is interconnected with the processor (3) and connected to the output of the recognition and identification unit (4), the latter being connected with its other output to an input of the payment registration unit (15) interconnected with the input/output processor (3). Outputs of the

recording unit (9) and the wager registration confirmation unit (12) are connected to corresponding inputs of the long-term memory unit (14).

Synchronization of the apparatus operation is ensured by introduction of a timer (17) and its connection to units and elements requiring synchronization (not shown in FIG. 1). Moreover, an output of the timer (17) is connected to the controller (7), the recognition and identification unit (4), the wager payment unit (5), and the recording unit (9).

Provision of the players, on their request, with information about a current wager distribution among the game set elements is carried out by a wager drawing display unit (18) coupled between an additional output of the controller (7) and an additional input of the input/output processor (3).

Return to the players, on their request, of wagers from unfinished playing rounds is carried out by a wager returning unit (19) interconnected with the controller (7) and the long-term memory unit (14) and also coupled between the recognition and identification unit (4) and the input/output processor (3) (these two connections are shown in FIG. 1 with a dotted line).

The game starts with forming by the game organizer a game set consisting of $N > 1$ information elements by entering from a console via a program interface to the electronic memory of a game set forming unit (1) of N non-repeating information codes, each corresponding to one of the game set elements. Information codes of the game set elements are transferred to a data dissemination unit (2) where they are converted into a message format about the game set contents and invitation to wager, and the said invitation enters a processor (3).

An input/output processor (3) converts received internal signals of the apparatus into signal to be transmitted through external communication lines and transmits these signals to registration-playing terminals (not shown in the Figure) of registered and potential players through external communication channels (not shown in the Figure) which may be computer interface lines, analog and digital telephone channels, communication links of local and global computer networks and on-line services, asynchronous communication links of cable TV networks, etc. Signals received from registration-playing terminals through external communication channels are converted by the input/output processor (3) into signals suitable by types and formats for dissemination and processing by functional units of the apparatus.

At the stage of forming a game set, the processor (3) converts a message about the game set contents received from the data dissemination unit (2) into data communication signals in accordance with standards and protocols accepted in communication links and networks used, and then sends these signals through communication channels to registration-playing terminals at a preset repetition frequency and/or on their requests.

The game set forming unit (1) may be used in a form of a computer terminal with a console and main memory, for example a personal computer; the data dissemination unit (2) may be made as a

dedicated main memory array of this terminal under control of a special program; the input/output processor (3), depending upon types of applied interfaces, communication channels and networks, may be used in a form of serial and parallel computer ports, network interface boards, modems and modem pools, controllers and adapters of integrated-service digital telephone networks (ISDN), controllers of asynchronous cable TV networks, specialized telecommunication processors, Internet-protocol converters – jointly with relevant hardware-software drivers.

A registration-playing terminal is used for registration of the players, input of wager data and output of drawing outcomes. These functions may be performed by touch-tone telephone sets, electronic terminals of points of sales of lottery coupons, terminals for servicing credit cards, bank's cards and also smart-cards, including automatic teller machines, discount card service terminals, video-terminals of asynchronous cable networks, personal computers of users of corporate and global computer networks and on-line services, etc. A particular case of a registration-playing terminal is a pulse-dial telephone set whose application in conjunction with the presently disclosed apparatus will be set forth separately.

Having received signals about game set contents and game regulations from the processor (3) to the registration-playing terminal, an operator of the registration-playing terminal selects one of the following three modes of interaction with the apparatus proposed by the data dissemination unit (2): payment registration mode, outcome review mode or wager placement mode, while sending a corresponding signal through feedback channels to the processor (3). Signals received through feedback channels are transferred, following conversion of types and formats, by the input/output processor (3) to the recognition and identification unit (4) which first of all adds an indication of a system timer (17) to the format of this signal and recognizes one of the aforementioned three modes of the apparatus – registration-playing terminal interaction.

The payment registration mode providing, as a rule, a pre-registration of personal data of players and their consent with access codes to this mode for the purposes of safeguarding against unauthorized access, depending upon the type of registration-playing terminal used and the mode of wager payment, may be realized differently. In case where the registration-playing terminal is used in a form of municipal or corporate network or a cable network video-terminal then, under preliminary agreement between the game authority and network authority, personal data of a subscriber may be transferred from the subscribers' database to the processor (3) for registration as a player; in so doing, the mode of wager and prize payment may be selected either the same as in the case of network service payment, or using credit cards, or in accordance with a discount-bonus system (see below). In case where the registration-playing terminal is used in a form of a terminal for servicing credit, bank's or smart cards, then all player's data necessary for registration of payments may be read-out directly from the card; in case of a smart card – including the sum of balance of virtual money in the

electronic circuit of the card, provided that the same card will be used as payment means during the game. If the game organizer is a discount system authority and the registration-playing terminal is used in a form of a terminal for servicing discount cards, then registration of a player may be made on the basis of registration data of a discount program participant, while effecting payments in accordance with a discount-bonus system. If the game organizer is a corporate computer network or on-line service authority, for example the Internet-network service provider, then registration of a player may be made on the basis of registration data of a corporate network or on-line service user, while effecting payments for participation in the game in accordance with a discount-bonus system and/or pre-agreed scheme of service payment. If the game organizer is an Internet-network server holder, then the players fill in a registration form transferred from the processor (3) to their personal computers, while choosing as a payment means one of credit cards acceptable to the game organizer. Finally, if the registration-playing terminal is used in a form of an electronic terminal of the point of sales of lottery coupons, then the registration data is used as a unique alphanumeric code of a coupon which takes the place of personal data of a player, whereas payment for a wager is charged directly by an operator of the registration-playing terminal, and a payment registration mode is combined with a wager distribution mode. A type of the registration-playing terminal used is determined by the processor (3) using one of the known methods in the course of connection installation.

In any case, after the recognition and identification unit (4) has recognized the payment registration mode, signals received through feedback channels from the registration-playing terminal, said signals containing address data of the players, personal codes of access to an account-register and payments data, are converted in the processor (3) from formats of communication through external lines into an internal signal format used in the apparatus, and entered a long-term memory unit (14) via a payment registration unit (15) which carries on a dialog with a particular registration-playing terminal via the processor (3) and a connection established through communication channels. In so doing, the payment registration unit (15) assigns a database personal address to every new player and, using this address, introduces personal identification data of the player with an access code in the long-term memory unit (14) and opens a personal playing account-register of the player. In the course of a primary registration of the player, the balance of his or her account-register is supplemented with an initial amount of monetary units used to measure the cost of wagers in case of conducting games with wagers of different price (for example, the game organizer may change a wager price depending upon the power of the game set N) and with non-monetary forms of payment.

One of possible non-monetary forms of payment for the participation in the game is a discount-bonus system widely used in discount programs, where for each purchase of a good or service a personal account of the program participant is supplemented with a certain amount of bonus points to be determined by the money price of the purchase; subsequently, said points may be

exchanged for new goods and/or services or used to receive certain discounts. It is naturally to use a discount-bonus scheme in those games organized by a discount program authority (see Example 7, below), however a similar scheme may be applied in cases of mass games with wagers by authorities of telephone and asynchronous TV networks, corporate networks and on-line services. In all these and similar cases, payment of wagers and prizes may be measured by certain quanta of services to be provided (see Examples 2, 4, 6, below).

From here on, the player may change the amount of a personal playing balance repeatedly, while choosing again the payment registration mode and interacting with his or her account-register from the registration-playing terminal through communication channels, the input/output processor (3) and the payment registration unit (15) in order to enter new payment units to the account-register or withdraw them from the account-register for use beyond the game. As a matter of fact, the structure of identification data of the player, payment mode and payment equivalent are determined by the game organizer and fixed in the registration of the player; subsequently, this data may be defined more accurately as needed in the payment registration mode.

In the outcome review mode, an outcome review unit (16) via the processor (3) and communication channels carries on a dialog with registered and potential players, while providing them with information about an outcome of completed playing rounds from the long-term memory unit (14).

If the player chooses the wager placement mode, in response to the aforementioned message of the data dissemination unit (2) containing an invitation to wager, the player inputs his or her identification data in the proposed form of a virtual playing coupon, indicates in this form a wager placed by him or her in a form of an information code of a corresponding game set element and sends this form as a signal of certain type and format through feedback channels to the input/output processor (3). A signal received and converted by the processor (3) is recognized by the recognition and identification unit (4) as a signal containing a players' data and wager information code, thereupon the unit (4) identifies the player when interacting with the long-term memory unit (14) while finding there his or her database address and checking the state of a personal account-register.

An important feature of identification associated with the specific nature of the game method is the fact that in case of failure to identify, the unit (4) transfers a received signal to the long-term memory unit (14) thereby freeing itself for the identification of the next signal, and the unit (14) is preset via the payment registration unit (15) and the processor (3) through communication channels of dialog with the registration-playing terminal as to a more precise definition of identification data of the player and/or entering of additional payments to his or her personal account-register.

In order that the players could realize a possibility not to wager by themselves but to entrust the apparatus with this duty, the player with the help of the registration-playing terminal inputs, in a

paid coupon and sends the received signal to the wager payment unit (5) in which this signal acquires the value of system time.

As a result, in all cases a signal at the output of the wager payment unit (5) contains three completed data fields: an account-register database address, a wager value in a form of the information code of a game set element, and system time of a signal output from the wager payment unit (5).

The recognition and identification unit (4), the wager payment unit (5), the payment registration unit (15) and the outcome review unit (16) may be realized as specialized imperative software modules located in the computer memory.

The long-term memory unit (14) is a database control system and, properly speaking, a database which are implemented with the use of high-performance disk drives of required capacity.

An output of the wager payment unit (5) enters a wager registration unit (6) where its format is supplemented with two data fields: a current round number field and a current round wager number field. To fill in these fields, the wager registration unit (6) uses readings of a playing-round counter (10) and readings of its internal counter of a number of wagers in the round which zeros every time with the change in readings of the playing-round counter (10). A full copy of a signal so registered is transferred to a wager registration confirmation unit (12) which forms from this copy a message about a wager registration and transfers this message to the long-term memory unit (14) to input registration data of a wager in an account-register using a database address indicated in the copy, and also transfers this message via the input/output processor (3) and communication channels to the registration-playing terminal from which a registered wager was placed. Thereupon, a registered signal is truncated by format up to a signal containing only a database address and a wager information code and transferred to the controller (7).

In this way, a message transferred by the wager registration confirmation unit (12) to the long-term memory unit (14) and the processor (3) followed by its transfer to the registration-playing terminal contains 5 filled in data fields: a database address, a wager value, a system time value, a serial number of the current playing round and a serial number of a wager in the current playing round, wherein a signal having a greater value of system time has a greater value of a combined index "round number – wager number".

The controller (7) serves to load wagers contained in information code signals to a wager distribution processor (11), take decisions about the start and end of playing rounds and transfer data about quantitative distribution of wagers in the completed round to a playing-logic unit (8). In so doing, the controller (7) interacts with the wager distribution processor (11) which realizes an iterative-analytical process of forming a quantitative wager distribution among the game set elements.

corresponds to this signal, and supplements this signal with the flag F (see, a dotted linkage between units (7) and (12) in FIG. 1) in order to ensure "instantaneousness" of the game. As a result, in case of the iterative-analytical game with instantaneous outcome, the wager registration confirmation unit (12) produces a signal about winnings or loss of a wager placed and transfers this signal to the long-term memory unit (14) and the input/output processor (3) to be passed to a player who has placed this wager. At the same time, to conserve the common character of statement of the invention, one may consider that in the apparatus for games with instantaneous outcome a variable-length signal buffer storage is formed in the controller (7).

The playing-logic unit (8) having received from the controller (7) quantitative data about a final distribution of wagers in the completed playing round along with data about special points, in accordance with the accepted game regulations determines an element (elements) of the game set which has (have) won in the completed playing round, calculates a budget and prize fund of the completed playing round and a quantitative allocation of the prize fund among prize-winning wagers. Then the unit (8) allows successive passage of signals unloaded from the buffer storage of the controller (7) to the recording unit (9), while comparing information codes of wagers with codes of winning elements of the game set and assigning relevant winning statuses to signals unloaded from the buffer storage of the controller (7), provided that the codes coincide.

From the received signals with winning statuses, the recording unit (9) creates a consolidated protocol-register of the completed round which contains both general data of the playing round (time of the start, time of the end, the number of wagers, numbers of elements won, the amount of a prize fund and its allocation by elements won, database addresses of wagers won and amounts of their winnings) and detailed data with respect to each wager (a database address, a wager value, a serial number in the round, a winning flag, the amount of the winnings). The recording unit (9) may also be realized on the basis of a variable-length buffer storage which under dynamic buffering conditions may use for its add-in memory resources released by the buffer storage of the controller (7) in the course of its unloading.

A consolidated protocol-register of the completed round is transferred to the long-term memory unit (14) for subsequent storage and presentation via the outcome review unit (16) and the processor (3) through communication channels to those who so desire. Upon arrival of this consolidated protocol-register, the long-term memory unit (14), in accordance with this protocol, corrects accounts-registers of the players whose wagers were subject to drawing in the completed round, wherein the difference between accounts-registers of natural persons and playing coupons whose wagers were introduced from registration-cash terminals, is of no importance.

Thus completes the processing of results of the completed playing round, and a new round begins with the arrival of the first signal containing a new round number from the wager registration

unit (6) to the controller (7); and just this moment is fixed by the controller (7) according to the system timer (1) as a time period for a new round beginning.

An embodiment of the structure and operation of the apparatus set forth above is called everywhere below as a "basic apparatus".

In the aforementioned particular case of using a pulse-dial telephone set as a registration-playing terminal, the processor (3) is a mini-automatic telephone exchange designed for, as a minimum, N telephone numbers with an automatic speaker's telephone number determinant and a voice generator under a preset program. In this case, N telephone numbers of the processor (3) are used to receive signals about wagers placed. When answering a subscriber's call by one of these N numbers, the processor (3) generates a signal containing a speaker's telephone number as identification data and an information code of a game set element which corresponds to a dialed telephone number of the input/output processor (3).

A quantity of numbers in a telephone exchange for a game among N-power set may be increased at the expense of numbers to be used for rendering additional services to the players. For example, (N+1) telephone number of the processor (3) may be used for receiving inquiries to generate a wager from the players, (N+2) telephone number of the processor (3) may be used for purchasing a credit to be entitled to wager, (N+3) telephone number of the processor (3) may be used for informing about results of the players in completed round for a certain period of time, (N+4) telephone number of the processor (3) may be used for returning wagers from unfinished playing rounds, etc. So, when answering a subscriber's call by the telephone number of an additional service, the processor (3) generates a signal containing a speaker's telephone number and a special code of this service.

An output of the processor (3) containing a speaker's telephone number as identification data and an information code of a game set element or an additional service code which corresponds to a dialed telephone number of the input/output processor (3), is recognized and identified in the recognition and identification unit (4). In the course of signal identification, a speaker's telephone number is associated with a database address in the long-term memory unit (14) under which a personal account-register is stored, if any, or a speaker receives a voice message that he or her is required to dial a (N+2) telephone number in order to open an account-register and purchase a minimum credit for the right to wager. After the signal containing a wager value has been identified, this signal is processed according to the above-described scheme, wherein data generated by the wager registration confirmation unit (12) and transferred to the processor (3) are converted by the voice generator and distributed to a speaker in response to his or her call, and upon identification of a wager placement code without participation of a player the wager is placed by a wager generator (13). Upon identification of a special playing credit purchase code, the payment registration unit (15) corrects accordingly a speaker's account-register balance in the long-term memory unit (14) and

produces to the processor (3) data about the corrected account balance which, after conversion by the voice generator in the processor (3), is distributed to the subscriber in a voice form in response to his or her call. Upon identification of a special code of a playing round outcome review, the outcome review unit (16) analyzes a speaker's account-register and produces to the processor (3) data about the outcome of a subscriber's wager drawing for a certain period of time which, after conversion by the voice generator in the processor (3), is distributed to the subscriber in a voice form in response to his or her call, etc. Essentially, payments for the participation in the game using the described modification of the apparatus are effected according to one of the known procedures for paying telephone services.

To implement a particular case of a wagering game method in accordance with the present invention which provides the players, on their request, with information about a current wager distribution among the game set elements, the basic apparatus is supplemented with a wager drawing display unit (18) coupled between an additional output of the controller (7) and an additional input of the processor (3). To obtain information about a current quantitative wager distribution among the game set elements, that is about a current wager drawing state, the player sends from his or her terminal to the processor (3) a signal carrying, along with identification data of the player, a data inquiry flag about the current drawing state. When the recognition and identification unit (4) detects in the signal received from the processor (3) an identified player's inquiry flag to information about the current drawing state, the recognition and identification unit (4) inquires on the wager generator (13) for a wager and supplements the signal received from the processor (3) with its value, thereupon transfers the signal so converted to the wager payment unit (5) in order to draw on an account of the identified player in the amount of one wager. Thereupon, a signal containing information about a wager placed without participation of the player is processed by other functional units; in the course of processing the signal with an inquiry flag to present information the controller (7) produces to the wager drawing display unit (18) data about quantitative wager distribution among game set elements and data about revealed special points of this distribution which are converted by the unit (18) into a message format about a wager drawing current state and transfers this message to the processor (3) for communication to the player who has sent the inquiry.

Return of wagers may be only conducted in the games with a postponed outcome of the drawing process from unfinished playing rounds.

To implement another particular case of a wagering game method in accordance with the present invention which enables the players to withdraw their wagers from a wager drawing process in games with a postponed outcome of the drawing, the basic apparatus is supplemented with a wager returning unit (19) coupled between the recognition and identification unit (4) and the input/output processor (3) and additionally interconnected with the controller (7) and the long-term memory unit

(14) (these two connections are shown in FIG. 1 with a dotted line). To return registered wagers from an unfinished playing round, the player sends from his or her registration-playing terminal to the processor (3) a signal carrying, along with identification data of the player, a request flag for wager return. In the recognition and identification unit (4), such a signal is identified and recognized as a signal of identified player for returning his or her wagers and transferred to the wager returning unit (19) which first of all checks, with the help of the long-term memory unit (14), the availability in an account-register of this player of data about registered wagers in the current playing round. With a negative check result the wager return signal is ignored, whereas with a positive check result the wager returning unit (19) initiates data exchange with the controller (7) providing the latter with a database address of the player who requested for wager return. This address is transferred by the controller (7) via a playing-logic unit (8) to a recording unit (9) for entering in the protocol of the current playing round. The controller (7) interrupts reception of signals with wagers from the wager registration unit (6) and changes over to interaction with a wager returning unit (19). The wager returning unit (19) receives from the long-term memory unit (14) and transfers to the controller (7) information codes of wagers placed by a given player in the current round. Codes of these wagers are transferred to the controller (7) in succession opposite to that of registration numbers of these wagers in the current playing round, and each wager code is supplemented with a special return flag. Having received an information code of the regular wager requested for return, the controller (7) transfers this code for processing by a wager distribution processor (11). The wager distribution processor (11) processes a wager code received from the controller (7) in the usual fashion, except for that during correlation a wager code with the code of a corresponding game set element, a number of correlated wagers accumulated in the processor (11) is not increased by 1, but rather decreases by 1. As a result of processing the regular wager with a return flag, the processor (11) produces, as usual, a signal-flag F indicative of the completion of wager drawing in the current round, said signal being translated by the controller (7) to the wager returning unit (19).

Having received from the processor (11) a signal $F=0$, after processing of the regular wager code with a return flag, the controller (7) transfers this wager code via the playing-logic unit (8) to the recording unit (9) in order to enter in the current round protocol a mark indicative of the return of this wager to a player whose database address was entered in the protocol earlier. Concurrently, the flag $F=0$ for the wager returning unit (19) is a confirmation of the regular wager return with a return flag and indication of the transfer to the controller (7) of the regular wager with a return flag. An account-register of the player located in the long-term memory unit (14) is added with a wager return mark along with a correction of an account-register balance. Having received from the processor (11) a signal $F=1$, after processing of the regular wager code with a return flag, the controller (7) carries the current playing round to completion in the usual fashion, while unloading the buffer storage via the

is set to 1, if it does not coincide – to 0. Outputs of the comparison units (24) are supplied to a “logical AND” gate (25) with N inverse inputs, whose output F is the output of the processor (11) to the controller (7). In so doing, $F=1$ if, and only if the processor (11) processes a code of the wager placed on the last “unoccupied” game set element. Besides, signal F is supplied to reset inputs of the counters (23) for their re-set to an initial zero state. Thus, in case of $F=0$, the states of the counters (23) remain unchanged, and the controller must proceed with the current playing round. Signal $F=1$ re-sets all counters (23) to 0, thus preparing the processor (11) for wager processing in the next round, and serves to the controller (7) an indication about the current round completion. To satisfy needs for full information about a current quantitative wager distribution among the game set elements, data contained in the counters (23) is transferred to the controller (7) over a data bus (26) under control of the controller (7).

A wager distribution processor in accordance with an apparatus realizing a “Force of Minimum” game method may be assembled according to a circuit depicted in FIG. 4 which is a development of FIG. 3. Here, a binary counter (23) also corresponds to each game set element, and readings of the counter are additionally compared with 1 in a comparison unit (27). When an input binary number coincides with 1, the bit of a comparison unit (27) sets to 1, when it does not coincide – to 0. Outputs of comparison units (27) are supplied to a N-input “exclusive OR” gate (28), whose output F1 takes a value of 1 when, and only when exactly one input equals 1. Besides, outputs of all comparison units (27) are supplied to N inputs of an encoder-address former (30). Signals of null-comparison units (24) are processed, like in the scheme depicted in FIG. 3, by a “logical AND” gate (25) with N inverse inputs whose output F0 gives warning of the absence of zeroes in the wager distribution (when $F0=1$) or of their presence (when $F0=0$). To reveal the availability of the first nonzero global minimum in the current wager distribution, signals F0 and F1 are supplied to a two-input “logical AND” gate (29) whose output F takes a value of $F=0$ if, and only if there is no nonzero global minimum, and a value of $F=1$ in case of its availability. Signal F is supplied to a control input of the encoder (30), so that when F moves from the level $F=0$ to the level $F=1$, the encoder (30) yields a binary number which corresponds to the number of the only nonzero input; with a reverse move, all output bits of the encoder (30) set to 0. Moreover, signal $F=1$ re-sets the counters (23) to an initial zero state, thus preparing the processor for wager processing in the next round. Thus, emergence of signal $F=1$ at the output of the wager distribution processor (11) is a flag for the controller (7) about the current round completion, wherein the encoder (30) output contains a binary number of the only game set element on which a minimum number of wagers has been placed, whereas signal $F=0$ is a flag for the controller (7) about the current round continuation. As in the scheme depicted in FIG. 3, the controller (7) is able to read data about the current wager distribution out of the data bus (26).

The function of a wager withdrawal from the current round of a "Force of Minimum" game may be taken into account when using modified decoder (20) and counters (23), by supplying a wager return code R as an additional control signal from the controller (7), so that with $R=0$, the scheme operates as described above, whereas with $R=1$, the decoder (20) actuates to the corresponding counter (23) a signal not to increase, but to decrease an accumulated sum by 1.

A wager distribution processor in accordance with an apparatus realizing a "Force of Minimax" game method may be assembled according to a circuit depicted in FIG. 5 which is a further development of FIG. 4. Here, as in FIG. 4, an "element" counter (23) also corresponds to each game set element, however an output of every such counter is processed by three comparison units: (24), (31), and (32). The unit (24) carried out comparison with 0, the unit (31) – comparison with an output of a minimum-counter (33), the unit (32) – comparison with an output of a maximum-counter (34). Initialization of all counters is carried out by the processor's output $F=1$ upon completion of the regular round; in so doing, all N "element" counters (23) are set to 0, a starting sum of the minimum-counter (33) is set equal to 1, that of the maximum-counter (34) is set equal to 3. Thus, in the beginning of each round the minimum-comparison unit (31) compares readings of "element" counters (23) with number 1 (a value of the first nonzero global minimum), the maximum-comparison unit (32) – with number 3 (a value of the first global maximum given a nonzero global minimum). Outputs of a null-comparison unit (24), as before, are processed by a "logical AND" gate (25) with N inverse inputs, whose output takes a value of $F_0=1$ if there are no zeros in the wager distribution, and a value $F_0=0$ if they are present. Outputs of the minimum-comparison unit (31) are supplied to corresponding inputs of a first encoder (30-1) and, besides, are processed by a first N -input "exclusive OR" gate (28-1). Outputs of the maximum-comparison unit (32) are supplied to corresponding inputs of a second encoder (30-2) and, besides, are processed by a second N -input "exclusive OR" gate (28-2). As a result, the output F_1 of the first gate (28-1) takes a value of 1 if, and only if exactly one coincidence has been fixed in the minimum-comparison units (31), and the output F_2 of the second gate (28-2) takes a value of 1 if, and only if exactly one coincidence has been fixed in the maximum-comparison units (32). Signals F_0 and F_1 are supplied to a first two-input "logical AND" gate (29-1) whose output F_3 takes a value of $F_3=1$ if there is the only nonzero minimum in the wager distribution, and a value $F_3=0$ if it is absent. Signals F_3 and F_2 are supplied to inputs of a minimum-counter (33) and a maximum-counter (34) respectively, which actuate when the input moves from high bit to zero bit, supplementing an accumulated sum with 1 and thus fixing successive levels for global minimum (an output of the counter (33)) and global maximum (an output of the counter (34)). Besides, signal F_3 enters a control input of the first encoder (30-1), signal F_2 enters a control input of the second encoder (30-2), with a binary number emerging at their output buses when a control signal moves from zero bit to high bit, the said number corresponding to the number of the only nonzero bit at the data input;

with a reverse move of the control signal all bits at the output buses of encoders (30) set to 0. Thus, a nonzero binary number at the output of the first encoder (30-1) corresponds to the number of a game set element which is a wager distribution global minimum, whereas a nonzero binary number at the output of the second encoder (30-2) corresponds to the number of a game set element which is a wager distribution global maximum. Finally, signals F3 and F2 are analyzed by a second two-input "logical AND" gate (29-2) whose output F takes a value of F=1 when, and only when exactly one nonzero minimum and exactly one maximum are available in the wager distribution.

As a result, the wager distribution processor (11) transfers to the controller (7) as its output data a binary number at the output bus of the first encoder (30-1), a binary number at the output bus of the second encoder (30-2), a binary number at the output bus of the counter (34) and a signal-flag F. A value of the flag F=1 is an indication to the controller about the current round completion; in so doing, the output of the first encoder (30-1) contains a binary number which is a wager distribution global minimum, the output of the second encoder (30-2) contains a binary number which is a wager distribution global maximum, the output of the counter (33) contains the number of wagers placed on a global minimum, the output of the counter (34) - the number of wagers placed on a global maximum. A value of the flag F=0 is an indication to the controller about the current round continuation; in so doing, a binary number at the output bus of the counter (33) corresponds to a global minimum value to be checked, a binary number at the output bus of the counter (34) corresponds to a global maximum value to be checked, a nonzero binary number at the output bus of the first encoder (30-1) corresponds to the number of an element - a wager distribution global minimum found in the current wager distribution, a zero binary number at the output bus of the first encoder (30-1) means the absence of global minimum in the current wager distribution, a nonzero binary number at the output bus of the second encoder (30-2) corresponds to the number of an element - a wager distribution global maximum found in the current wager distribution, a zero binary number at the output bus of the second encoder (30-2) means the absence of global minimum in the current wager distribution. Moreover, as before, the controller (7) is able to read data about the current wager distribution out of the processor (11), via the data bus (26).

The function of a wager withdrawal from the current round of a "Force of Minimax" game may be taken into account when using modified decoder (20), "element" counters (23) and also counters (33) and (34), by supplying a wager return code R as an additional control signal from the controller (7). In this case, with R=0 (wager placed), the scheme operates as described above, whereas with R=1 (wager withdrawn), the decoder (20) actuates to the corresponding counter (23) an indication not to increase, but to decrease an accumulated sum by 1, and sets the signal R=1 to additional control inputs of the counters (33) and (34) (these inputs are not shown in FIG. 3), so that

code of the registration card to be handed out and whose balance is supplemented with a paid sum of the playing credit. In the course of registering the personal data, the players may assign a personal identification number (PIN-code) in order to further protect their personal files and playing accounts against unauthorized access.

The slot machine reads out an individual code of the card to verify a personal playing balance in the database; a card holder is advised to input a personal PIN-code in order to open access to use a personal account-register of the authorized player. Following successful completion of these operations, the player from a menu proposed chooses a game type, a game set kind, one wager price, places wagers and/or forms requests to provide him or her with information about the current state of wager drawing which are sent by a computer server for processing in a corresponding apparatus embodying a game type chosen.

For convenience, slot machines may be equipped with printers to notify the players of wagers placed by them, whereas a local network may additionally comprise reference-information terminals through which everybody who wishes so may obtain information about completed playing rounds. Any player having produced his or her registration card may receive, through cash terminal operators, a money equivalent of the cost of a playing credit balance from his or her consolidated account-register or pay an additional sum of the playing credit which will be entered to his or her account. Moreover, using cash terminal operators, a player who is not able to wait for the completion of rounds with a postponed wager drawing outcome, may file a request for the return of his or her wagers from unfinished playing rounds. Upon receipt of such a request, a playing server blocks a further acceptance of wagers and requests associated with an individual card code of this player and dispatches the request for the return of wagers among apparatuses in accordance with the present invention which enter the game system, with the inclusion of the cost of wagers returned in the player's personal account; thereupon, the player is given a money equivalent of a total balance of the playing credit in his or her account.

In its minimum configuration, a local area network of a "slot machine centers" may contain only 1-2 playing terminals; however, it may be added with a communication input/output processor supporting interaction of the playing server with remote playing terminals through a switched communication line (direct-connection telephone service) and/or batches (TCP/IP – Internet). In this case, a player leaving a "slot machine center" can participate in the game from any other place with the available telephone and computer with modem or, at least, a touch-tone telephone. If the player has access to Internet, the communication input/output processor provides him or her with a whole range of services of a "slot machine center" with a possibility to supplement a personal playing account by means of bank's credit cards; in the absence of access to Internet and with the availability of a computer with modem, the same services may be rendered through a direct telephone connection

in the BBS mode (electronic notice board), with the availability of only a touch-tone telephone – through a direct connection in the telephone lottery mode (see, Example 4).

Design of hierarchical structures and clusters from playing systems of different level makes it possible to create corporate playing networks joining in one playing round at a “virtual playing table” of players from different “slot machine centers” and different cities, and enabling, at the expense of mass nature, a rather quick completion of playing rounds of iterative-analytical games on game sets of high power N ($N > 1,000$), thus affording the winners large amounts of winnings in short periods of time.

Example 2. Games In Hotels and Cable Television Systems

Iterative-analytical games may be realized rather simply in hotels in which rooms are equipped with a cable system for broadcasting TV programs requiring payment or intrahotel cable channel for providing information services in the interactive mode. A guest, using a remote control console and a TV screen menu which in this particular case offers the services of a registration-playing terminal, carries on a dialog with a playing system such as if it were in the above-described “slot machine center”, while identifying himself by the number of a room occupied and a personal PIN-code. The cost of wagers placed is added to a guest account, wagers won are materialized by the hotel in the money or other form (souvenirs, free-of-charge services, free nourishment, living-conditions enhancement, etc.).

When discharging from the hotel, a guest may file a request for the return of wagers from unfinished playing rounds and be indemnified for the withdrawal of a wager from the game. In the absence of such a request and in case where the guest has won, a hotel administration may find him or her after discharge with the help of a registration book.

Playing systems of several hotels making use of one trade name and/or being part of a separate holding may be united into clusters and hierarchical structures just as described in Example 1.

Similar procedures may be used for the conduction of iterative-analytical games among subscribers of cable TV systems with interactive services which are widely practiced in view of a wide-spread introduction of asynchronous modes of data, sound and video ATM communications (Asynchronous Transfer Mode – see, A. N. Nazarov, M. V. Simonov. ATM: High-Speed Network Technology. Eco-trends, Moscow, 1998). Each user of such a network is an authorized user of its services with a personal network address, registration number and adjusted payment system, so that the opening of a personal paying account and correction of its balance in the course of the game are trivial procedures for such networks. In this case, instead of the play for money, a game organizer may assign wager prices in units for measuring consumer-payable information resources to be

supplied by the network (for example, in the minutes of sport or entertainment program broadcasting time, optionally), and settle accounts with players just in these units using part of resources released as a result of the game conduct (but already paid at the expense of wagers lost) to provide a free or reduced-rate access to networked services to certain groups of the population.

Example 3. National Electronic Lotteries

The existing organization and technological infrastructure for the conduction of traditional national electronic lotteries which contains points of sales of numbered lottery coupons to the population (like "Lotto-Million", see above) with electronic terminals for wager registration, may be used, without substantial alterations, for the conduct of iterative-analytical games. Minor changes will be inserted only to design and assemblage of information fields of lottery coupons in which the following elements will appear: a game type selection field, a field of the game set selection from a predetermined pool of sets and a wager assigning field (the said pool of sets may be represented by integer ranges from 0 to 9, from 10 to 99, from 100 to 999, from 1000 to 9999, etc., so that the belonging of a wager to be assigned to one of such sets is unambiguously determined by a numeric value of this wager), as well as to hardware-software of the central playing server which must be adapted to a wager registration mode with timing separation in order to form turns and supplemented with apparatuses in accordance with the present invention which embody iterative-analytical games. When providing a necessary speed of response of the central playing server and sufficient channel capacity, an electronic terminal of the point of sales of lottery coupons prints on a player's coupon during registration of his or her wager a registration data and time, a wager accounting number in the current playing round and a round number. Using this data, a player can check his or her coupon-wager against a prize later on, through a lottery information service. In case of a "Force of Zero" instantaneous lottery, the electronic terminal prints an outcome on a player's coupon right after a wager has been read from the coupon and registered by the central server in a corresponding apparatus in accordance with the present invention which embodies a selected game.

To simplify operations concerning the award of prizes and technical realization of the procedures for wager registration in a real time mode, national electronic iterative-analytical lottery games may be conducted according to a multilevel hierarchical scheme of connecting the playing servers, where each level corresponds to a certain range of power N of game sets, so that, for example, $N < 100$ games are processed by servers covering territories with population up to 20-30 thousand people, $N < 1000$ games - by servers covering territories with population up to 100-150 thousand people, $N < 10,000$ games - by servers covering territories with population up to 1.5-3.0 million people, etc. Provision of electron wager registration terminals in the point of sales of lottery coupons with the screens to display the current playing round state enables realization of a full-value

player's personal playing account the price of two wagers – an additional wager is placed without participation of the player as a compensation for data presentation.

Regular broadcasts of short duration over the course of iterative-analytical games in different time of the day will favor both acceleration of forming the results of each playing round to be broadcast and attraction to such telecasts of additional orders for advertising.

With a special arrangement of the input/output processor (3) of apparatuses for realizing iterative-analytical games in accordance with the present invention, telephone games may also involve those telephone network subscribers who use pulse-dial telephone sets (see, above).

Example 5. Advertising Lotteries Through E-mail

In 1997, the company Harris Online Gaming, Inc., Arkansas, USA, offered the subscription to a free advertising lottery conducted through E-mail (Internet resource <http://www.emailotto.com>). Sponsors of this lottery pay the cost of numbered virtual lottery tickets representing advertisements of these sponsors, said tickets being automatically forwarded to the lottery subscribers through E-mail. Each lottery ticket, apart from an individual number and advertisement, contains some winning numbers which are assigned by the authority randomly and which comparison with an individual ticket number allows the subscriber to determine right away whether his or her ticket received is winning. Moreover, when subscribing to the lottery, each subscriber may assign an arbitrary index of 9 digits to take part in the drawings of the grand-prix in jack-pot conducted regularly (in proportion to financial resources accumulated). Sponsor financial resources drawn in by the game authority are divided into two equal parts, one of which is used for paying current winnings by lottery tickets, the other – for awarding a grand-prix.

The purpose of organizers of this game is to draw in sponsor's advertising means by providing services on the delivery of sponsors' advertisements to subscribers; that is why the game authorities and sponsors are interested in increasing the number of subscribers and advertisements. But the only "magnetic force" of this lottery proposed to its subscribers is the hope of a free prize, whatever interest might be, despite a jack-point provides for the only winning combination out of 362,880 possible, and the method of selecting the winning numbers of lottery tickets by the game organizer avoids the players fully and remains unknown to them.

At the same time, the application of the claimed method allowing to increase the number of those participating in a free lottery by enhancing its playing interest and confidence in the prize-drawing outcome, given the elements of competitive strength, will be equally useful for both the game organizers and sponsors. In fact, when using this method in accordance with the present invention, the lottery subscribers, as before, receive from the organizer, through E-mail, free numbered coupons with each coupon additionally containing a special form the completion of which unambiguously

determines the selection of a game type, a game set and a game wager. The players send the completed forms with data about wagers to the server of the game authority, where this data is registered in real time and processed in a corresponding apparatus in accordance with the present invention. In so doing, the server provides the player with a wager registration message containing a regular advertisement which will be noted by the player without fail, since he or she uses every such message for checking against the results of the completed round. The players may accumulate playing coupons in order to use them later on in the interactive mode of the game, while sending part of coupons as a request filed in the game organizer's name for obtaining information about the current round state; and information messages sent in response to the players may be accompanied by advertisements which will be noted by the players without fail, because messages to be received are used by the players for a purposeful placing of their wagers. Thus, the iterative-analytical method in the embodiment under consideration ensures, apart from enhancing the interest in the game, at least twofold increase in the "advertising return" of each lottery ticket.

Example 6. Games In the Internet Network

From the aforementioned version of conducting the Canadian national lottery "6 of 49" in the Internet network and from above examples it is clear that the adjustment of electronic system of payments through credit cards and possibility of rapid exchange of both text and graphical information makes the Internet network a promising environment for a widespread and full-scale introduction of iterative-analytical games. Technically, such introduction has no difficulties; however, for the countries that impose legislative restrictions on money lotteries to be organized by private persons and companies, it is possible to consider the possibility to conduct iterative-analytical games using servers of those entities providing the Internet services (Internet-providers) with payment of wagers in units for measuring the cost of providers' services (for example, in minutes of the Internet access time). In the latter case, in the course of a game an Internet-provider redistributes the Internet access time paid by the players among them and itself in accordance with playing round outcomes and announced regulations of the prize-fund assignment with the result that the provider is able to offer its services to certain groups of the population and institutions on free-of-charge or preferential terms. This circumstance may promote the drawing of further participants in the game and turn the conduction of iterative-analytical games by Internet-providers into a socially useful measure.

Example 7. Games In Discount and Payment Systems

In the 90s, consumers' markets of many countries were flooded with discount systems designed for the drawing regular customers in large provides of goods and services at the expense of providing these customers with flexible systems of individual rebates (discounts) for goods and

services and of other different privileges, where an count of each customer is supplemented with a certain amount of bonus points for each payment received from him or her (or a sum of payments for a certain period of time) followed by realization of accumulated points through the aforementioned system of discounts and privileges.

Implementation of a discount idea has become possible thanks to the introduction by providers of goods and services of hierarchical corporate computer networks covering each cash register through which the sale of a good or service is carried out, and containing terminals for the registration of new customers in all points of the provider - customer interaction. In the course of registration in the discount system, each customer receives a personal identification number which is applied onto a personal discount card to be handed out to a customer and which is associated in a one-to-one manner with a system file to be created for a customer's personal data and his or her personal account-register for chronological account of all payments, bonus points added and also discounts and other privileges used by the customer (see, for example, Internet resources <http://www.gb.be> of the Belgian supermarket network GB, <http://www.petro-canada.ca> of the Canadian gas station network Petro-Canada, <http://www.transaero.ru> of the Russian airline Transaero). Internet-servers of discount systems not only provide a detailed information about discounts and privileges but also start providing the customer with access via a PIN-code to his or her personal account-register of bonus points and to a personal data file (see, for example, Internet resources <http://www.swissair.com/qualiflyer/index.htm> of the Swiss airline Swissair, <http://www.delta-air.com/skymile/index.htm> of the American airline Delta Airlines).

The existing organization and technological infrastructure of discount systems is not only a promising environment for the conduct of iterative-analytical games, but it itself may derive additional benefits from their introduction. An important factor of success of such introduction consists in the fixing of wager prices in bonus points. Indeed, if the Internet-server of the discount system has an application with iterative-analytical games installed, then any participant of the discount system may, without additional registration and above all without new financial expenses, enter into the game while paying wagers with bonus points from his or her personal account in the discount system, bearing in mind that winnings will also be transformed into bonus points on the personal account. In the course of the game, therefore, redistribution of bonus points added to participants of the discount system will occur between them and a provider of goods/services. As a result, the game renders the discount system yet more attractive to the players, whereas a game organizer may, at the expense of bonus points gained from the game, save its own financial resources and/or provide its goods and services to certain groups of the population on a charitable basis.

In case of introduction of iterative-analytical games to discount programs of airlines, passengers may also take part in the games in flight, while paying wagers with bonus points

accumulated on a personal account earlier and/or to be added for the conduct of a flight concerned. Use of iterative-analytical games will expand the range of passengers to be registered as participants of the discount program in flight; technical implementation of the games on board the plane will be determined by equipment of a specific plane with modern machinery and appliances – these may be lotteries with paper coupons (see, the second embodiment of the method in accordance with the present invention), or telephone lotteries with the acceptance of wager through telephone sets installed in each row of seats and regular TV broadcast of the course of playing rounds over airborne cable TV broadcast network (see, Example 4), or full-value interactive games using personal interactive video-monitors of asynchronous airborne network of information services built in the seats (see, Example 2, as well as Swissair Gazette, June'98, p.103).

Numerous bank payment systems by plastic debit and credit cards and also by cards with a built-in chip (the so called smart-cards) the memory of which is loaded with a sum of “electronic” or virtual money backed by real money (see, Internet resource <http://www.protonworld.com> of the electronic money system Proton), are close to discount systems in respect of the organization and technological infrastructure used. Payments by debit and credit cards are widely spread in medium and large retailers and services, payments with smart-cards are used to pay for everyday petty expenses: urban transport travel, parking time, calls in the public telephone, buying newspapers, etc. Holders of such cards have been identified in the system with the numbers of their cards, PIN-codes and numbers of personal bank accounts, wherein ready money pay out (and load of new “electronic” money in smart-cards) is supported by networks of automatic teller machines each representing a personal computer with a graphic controller. For a special purpose to load smart-cards, there have been created networks of additional electronic terminals with alphanumeric displays which are built in public touch-tone telephones booths or may be acquired by a smart-card holder separately and connected to a telephone set at home for performing operations with “electronic” money without going out of doors.

Interaction-analytical games as one of applications of electronic payment systems through debit, credit and smart cards, due to their playing interest and sporting competitive strength of the interactive mode, constitute a promising direction in the development of national and municipal electronic lotteries to draw the interest of vast masses of the population.

The second embodiment of a wagering game method may be explained as follows. A game organizer assigns a game set in the form of a table comprising N different elements (for example, 33 letters of the Russian alphabet) and disseminates, among potential players, those playing coupons bearing detachable duplicates each having a unique identification index and information block containing data about the game set elements. The player purchases a distributor's playing coupon, marks in its information block a game set element on which he or she places a wager and sends the

(Musical notation for the first system)

An example of the diagram of a quantitative wager distribution within an unfinished playing round of a “Force of Minimax” game is shown in FIG. 6, where a game set consists of integers from 1 to 20. FIG. 7 shows an example of the diagram of a quantitative wager distribution within a completed playing round, where the number 13 (1 wager) has been fixed as a global minimum, the number 19 (6 wagers) – as a global maximum. A total wager number in this round amounted to 63, so that with a 50 % prize fund, a wager numbered 13 has won the cost of 32 wagers.

When embodying this wagering game method, use may be made of the computer technology, in particular special computer programs and systems of reading data out of paper carriers, thus enabling a rather quick reading of identification data and marks about the placed wagers from coupons and processing of these data and marks by an algorithm which embodies a wagering game method in accordance with the present invention. This embodiment allows to implement the mode of the players' access to information about the current round state and also the mode of the wagers' return from unfinished playing rounds.

Conventional-free lotteries may be an example of using a wagering game under the second method embodiment in accordance with the present invention. Such lotteries are conducted, as a rule, by mass media editorial staffs and management of cultural and entertainment and sporting institutions with the aim to increase a number of copies printed and fillability of halls. In case of mass media, a lottery ticket is a coupon published in the edition, and completion of the coupon unambiguously identifies a player (see, the newspaper "Moskovsky Komsomolets", No. 96-B, dated May 25, 1998, p.1), whereas in case of measures of entertainment – a copy of a ticket of admittance with the indication of the date and time of taking a measure and also an address of a seat occupied by a spectator (a sector, row, stall number). The cost

of each playing coupon is a part of an edition retail price or ticket of admittance and is only known to a lottery authority. With a conventional lottery, the players are deprived of the possibility to wager, they only must transfer their playing coupons to a game organizer by a fixed date, and the organizer determines the winning coupons by random sampling one or more coupons from a number of all coupons received, while distributing among the winners a prize fund to be determined by a total number of "unobviously sold" coupons.

In case of an iterative-analytical game, each playing coupon has an applied information block enabling the player to indicate as his or her wager one of elements of a predetermined game set with power N (such block may be used, for example, in the form of a table of natural numbers from 1 to 100, or a stencil block consisting of three fields to write down any number from 0 to 999). Coupons with marked wagers coming from the players are included by a game organizer, in the order of arrival priority, in an iterative-analytical coupon drawing process, while registering for each coupon a serial wager number in the current playing round and a number of this round. Usually the destination of conventional-free lotteries does not provide for the making of direct profits as a result of their conduct; therefore, a prize fund amount of the game coincides with the amount of budget of each playing round, thus allowing to guarantee winners' prizes in the amount of no less than N coupons for a "Force of Zero" game and no less than $2N$ coupons for a "Force of Minimum" game, wherein with $N > 50-60$, in the overwhelming majority of outcomes a prize fund amount of each round of a "Force of Minimax" game will exceed $3N$ coupons.

Various versions of design and assemblage of information blocks on playing coupons may enable the participants of an iterative-analytical game to choose both a game type ("Force of Zero", "Force of Minimum", "Force of Minimax") and a game set from several predetermined sets characterized by power N . To form the turn of coupons-wagers and run an iterative-analytical coupon drawing process, different methods and means may be used, ranging from a manual sorting and arrangement of incoming coupons among the elements of a game set table under control of a "counting committee" to the application of playing systems equipped with computerized terminals of data reading, recognition and registration, with the implementation of drawing processes through an application package or special processors similar to those proposed by the present invention. In case of using computer systems, it is advisable to represent outcomes and processes of wager drawing on screens or electronic displays during breaks and on completion of mass measures in order to enhance the interest potential players in the game.

So, the performance of an iterative-analytical process over a waiting line of wagers ensures a full dependence of the game outcomes upon actions of its participants. This enables, along with the possibility to run a nontrivial game even with small powers of a game set N (starting from $N=2, 3$) and small number of players (from 2 persons) and the possibility to announce, before the game start, a

minimum guaranteed prize whose amount may be N times as many as the cost of one wager, while retaining profitability for a game organizer, to create playing applications so attractive for a mass consumer ranging from instantaneous "paper" or electronic lotteries and slot machines to national interactive telephone lotteries and international games through on-line services and Internet.

What is claimed is:

1. A wagering game method which comprises forming of a game set of $N > 1$ information elements by means of generation of a set of N non-repeating information codes in a computer memory, propagation, among the players through communication lines, of signals carrying information about the game set elements, selection by every player of one of the game set elements as a wager, forwarding, through feedback communication lines, of signals which identify the players and carry information about the wagers, identification and registration of signals received through feedback lines, forming of a wager payment data, a wager drawing within playing rounds, characterized in that the signals carrying wager information are registered as a sequence of signals in the order of signal arrival through feedback lines, said sequence is kept hidden from the players until the playing round is completed, and the wager drawing is carried out by means of an iterative-analytical process of forming a quantitative wager distribution among the game set elements, said process is kept hidden from the players until the playing round is completed, and within every iteration of the said process a regular signal of a registered signal sequence is correlated with the information code of the game set element selected as a wager by the player, the number of signals correlated with the information code of the game set element within the current playing round is determined, observation of conditions of a wager drawing end is checked, and a wager drawing is completed as soon as the said conditions are observed, and in the presence of registered wager information carrying signals not processed by the iterative-analytical wager drawing process before the completion of the current playing round the said signals are processed by the iterative-analytical wager drawing process within one of the next rounds.
2. A method of claim 1, characterized in that within every iteration of a wager drawing process, information codes are revealed with which no signal has been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the processing of a signal containing information about a wager on the only game set element with whose information code no signal has been correlated by the iterative-analytical process within the current playing round before the processing of this signal.
3. A method of claim 1, characterized in that within every iteration of a wager drawing process, starting with the N iteration, information codes are revealed with which no signal has been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the processing of a signal containing information about a wager on the only game set

element with whose information code no signal has been correlated by the iterative-analytical process within the current playing round before the processing of this signal.

4. A method of claim 1, characterized in that within every iteration of a wager drawing process, information codes are revealed with which only one signal has been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the presence of only one said information code and in the absence of information codes with which no signal has been correlated by the iterative-analytical process within the current playing round before the processing of this signal.

5. A method of claim 1, characterized in that within every iteration of a wager drawing process, starting with the (2N-1) iteration, information codes are revealed with which only one signal has been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the presence of only one said information code and in the absence of information codes with which no signal has been correlated by the iterative-analytical process within the current playing round before the processing of this signal.

6. A method of claim 1, characterized in that with a game set formed by $N > 2$ information elements, within every iteration of a wager drawing process, information codes are revealed with which the minimum and maximum number of signals have been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the presence of only one information code with which the minimum number of signals has been correlated within the current playing round, of only one information code with which the maximum number of signals has been correlated within the current playing round, and in the absence of information codes with which no signal has been correlated within the current playing round.

7. A method of claim 1, characterized in that with a game set formed by $N > 2$ information elements, within every iteration of a wager drawing process, starting with the 2N iteration, information codes are revealed with which the minimum and the maximum number of signals have been correlated within the current playing round, and the iterative-analytical wager drawing process is completed in the presence of only one information code with which the minimum number of signals has been correlated within the current playing round, of only one information code with which the maximum number of signals has been correlated within the current playing round, and in the absence of information codes with which no signal has been correlated within the current playing round.

8. A wagering game method which comprises forming of a game set of $N > 1$ non-repeating information elements, propagation among the players of playing coupons carrying information about the contents of the game set information elements, entering of identification data onto the said coupons, marking of one of the game set information elements by every player as a

wager selected, return of the coupons with the wager marks on them to effect wager drawing, registration of the returned coupons with marked wagers and wager drawings within playing rounds, characterized in that the coupons with the wager marks on them are registered as a sequence of coupons in the order of their return arrival, said sequence is kept hidden from the players until the playing round is completed, and the wager drawing is carried out by means of an iterative-analytical process of forming a quantitative wager distribution among the game set elements, said process is kept hidden from the players until the playing round is completed, and within every iteration of the said process a regular coupon of a registered coupon sequence is correlated with the game set information element selected as a wager by the player, the number of coupons correlated with each information element of the game set within the current playing round is determined, observation of conditions of a wager drawing end is checked, and the wager drawing is completed as soon as the said conditions are observed, and in the presence of registered coupons carrying wager marks which are not processed by the iterative-analytical wager drawing process before the completion of the current playing round, these coupons are processed by the iterative-analytical wager drawing process within one of the next rounds.

9. A method of claim 8, characterized in that within every iteration of a wager drawing process, the game set elements are revealed with which no coupon has been correlated within the current playing round, and the wager drawing is completed with an iterative-analytical processing of a coupon containing a wager mark corresponding to the only game set element with which no coupon has been correlated within the current playing round before the processing of this coupon.

10. A method of claim 8, characterized in that within every iteration of a wager drawing process, starting with the N iteration, the game set elements are revealed with which no coupon has been correlated within the current playing round, and the wager drawing is completed with an iterative-analytical processing of a coupon containing a wager mark corresponding to the only game set element with which no coupon has been correlated within the current playing round before the processing of this coupon.

11. A method of claim 8, characterized in that within every iteration of a wager drawing process, the game set elements are revealed with which only one coupon has been correlated within the current playing round, and the wager drawing is completed in the presence of only one such element and in the absence of in the game set of elements with which no coupon has been correlated within the current playing round.

12. A method of claim 8, characterized in that within every iteration of a wager drawing process, starting with the $(2N-1)$ iteration, the game set elements are revealed with which only one coupon has been correlated within the current playing round, and the wager drawing is completed in

the presence of only one said element and in the absence in the game set of elements with which no coupon has been correlated within the current playing round.

13. A method of claim 8, characterized in that with a game set formed by $N > 2$ information elements, within every iteration of a wager drawing process the game set elements are revealed with which the minimum and the maximum number of coupons have been correlated within the current playing round, and the wager drawing process is completed in the presence of only one element with which the minimum number of coupons has been correlated within the current playing round, of only one element with which the maximum number of coupons has been correlated within the current playing round, and in the absence of game set elements with which no coupon has been correlated within the current playing round.

14. A method of claim 8, characterized in that with a game set formed by $N > 2$ information elements, within every iteration of a wager drawing process, starting with the 2N iteration, the game set elements are revealed with which the minimum and the maximum number of coupons have been correlated within the current playing round, and the wager drawing process is completed in the presence of only one element with which the minimum number of coupons has been correlated within the current playing round, of only one element with which the maximum number of coupons has been correlated within the current playing round, and in the absence in the game set of elements with which no coupon has been correlated within the current playing round.

15. A method of claims 1-14, characterized in that, on request of a player, he or she is provided with accumulated information about current quantitative wager distribution among the game set elements relating to an unfinished playing round, and the said information is presented to the player in exchange for a wager which is placed without his or her participation and processed by a wager drawing process out of turn.

16. A method of claims 1-14, characterized in that, on request of a player, before the completion of a playing round, signals or coupons containing a wager information which were received from the said player are withdrawn from a wager drawing process in the order opposite to that of their registration.

17. A wagering game apparatus to carry out a method as claimed in claim 1, comprising a game set forming unit (1) connected via data dissemination unit (2) to one of inputs of a processor (3) connected with its information output to a recognition and identification unit (4), a wager payment unit (5), a wager registration unit (6), a controller (7), a playing-logic unit (8), and a recording unit (9) which are connected in series, a playing-round counter (10) connected to the second input of the wager registration unit (6) and to the second output of the controller (7) connected with its second input to the output of the game set forming unit (1), a long-term memory unit (14) interconnected with the recognition and identification unit (4) and the wager payment unit (5), a timer (17) connected to

the controller (7), the recognition and identification unit (4), the wager payment unit (5), and the recording unit (9), characterized in that it further comprises a wager distribution processor (11) interconnected with the controller (7), a wager registration confirmation unit (12) connected to the input of the processor (3) and the second output of the wager registration unit (6), a payment registration unit (15) and an outcome review unit (16) which are interconnected with the long-term memory unit (14) and the processor (3) and also connected to corresponding outputs of the recognition and identification unit (4), the outputs of the recording unit (9) and the wager registration confirmation unit (12) being connected to corresponding inputs of the long-term memory unit (14).

18. An apparatus of claim 17, characterized in that it comprises a wager generator (13) interconnected with the recognition and identification unit (4) and also connected to the output of the game set forming unit (1).

19. An apparatus of claims 17-18, characterized in that it comprises a wager drawing display unit (18) coupled between the controller (7) and the input/output processor (3).

20. An apparatus of claims 17-18, characterized in that it comprises a wager returning unit (19) interconnected with the controller (7) and the long-term memory unit (14) and also connected to an output of the recognition and identification unit (4) and an input of the input/output processor (3).

21. An apparatus of claims 17-20, characterized in that the wager distribution processor (11) comprises a decoder (20) connected with its outputs to driving inputs of flip-flops (21) which are connected with their outputs to inputs of a "logical AND" gate (22) connected with its output to reset inputs of the flip-flops (21).

22. An apparatus of claims 17-20, characterized in that the wager distribution processor (11) comprises a decoder (20) connected with its outputs to inputs of counters (23) whose outputs are connected, via comparison units (24), to inverse inputs of a “logical AND” gate (25) connected with its output to reset inputs of the counters (23).

23. An apparatus of claims 17-20, characterized in that the wager distribution processor (11) comprises a decoder (20), each of N 1-bit outputs of the said decoder being coupled to a stage of a counter (23) and of a null-comparison unit (24) and a 1-comparison unit (27) which are connected in parallel to the said counter (23), a “logical AND” gate (25) with N inverse inputs each coupled to the output of the corresponding null-comparison unit (24), an “exclusive OR” gate (28) with N inputs each coupled to the output of the corresponding 1-comparison unit (27), a “logical AND” gate (29) with two inputs connected to outputs of the gates (25) and (28), and an encoder (30) with N inputs each coupled to the output of the corresponding 1-comparison unit (27), the said gate (29) being connected with its output to reset inputs of the counters (23) and to a control input of the encoder (30).

24. An apparatus of claims 17-20, characterized in that the wager distribution processor (11) comprises a decoder (20), each of N 1-bit outputs of the said decoder being coupled to a stage of a counter (23) and of a null-comparison unit (24), a minimum-comparison unit (31), and a maximum-comparison unit (32) which are connected in parallel to the said counter (23), a "logical AND" gate (25) with N inverse inputs each coupled to the output of the corresponding null-comparison unit (24), a first "exclusive OR" gate (28-1) with N inputs each coupled to the output of the corresponding minimum-comparison unit (31), a first "logical AND" gate (29-1) with two inputs connected to outputs of the gates (25) and (28-1), a second "exclusive OR" gate (28-2) with N inputs each coupled to the output of the corresponding maximum-comparison unit (32), a second "logical AND" gate (29-2) with two inputs connected to outputs of the gates (29-1) and (28-2), a first encoder (30-1) with N inputs each coupled to the output of the corresponding minimum-comparison unit (31), a second encoder (30-2) with N inputs each coupled to the output of the corresponding maximum-comparison unit (32), a minimum-counter (33) coupled to the output of the gate (29-1), the said minimum-counter (33) being connected with its output to the input of each of minimum-comparison units (31), and a maximum-counter (34) coupled to the output of the gate (28-2), the said maximum-counter (34) being connected with its output to the input of each of maximum-comparison units (32), the said gate (29-2) being connected with its output to reset inputs of the counters (23), (33), (34), the said gate (29-1) being connected with its output to a control input of the first encoder (30-1), the said gate (28-2) being connected with its output to a control input of the second encoder (30-2).

25. An apparatus of claims 17-24, characterized in that the input/output processor (3) includes a telephone exchange for at least N telephone numbers with an automatic speaker's telephone number determinant and a controlled voice generator.

26. An apparatus of claims 17-24, characterized in that the input/output processor (3) includes a computer network server and a unit for contacting clients of the said network.

РСТ

ВСЕМИРНАЯ ОРГАНИЗАЦИЯ
ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ
Международное бюро



МЕЖДУНАРОДНАЯ ЗАЯВКА, ОПУБЛИКОВАННАЯ В СООТВЕТСТВИИ
С ДОГОВОРом О ПАТЕНТНОЙ КООПЕРАЦИИ (РСТ)

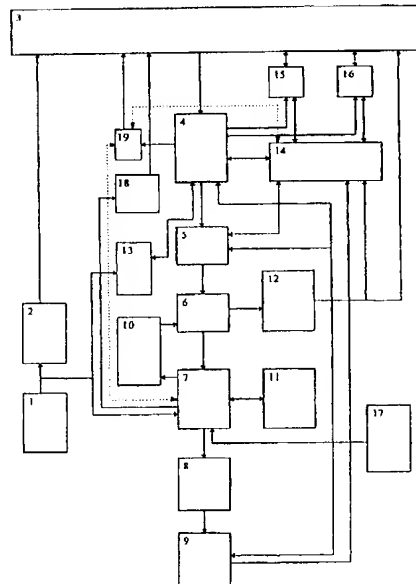
(51) Международная классификация изобретения: A63F 3/00, 3/06, G07C 15/00, G06F 19/00 // 161:00	A1	(11) Номер международной публикации: WO 00/09224 (43) Дата международной публикации: 24 февраля 2000 (24.02.00)
(21) Номер международной заявки: PCT/RU98/00384 (22) Дата международной подачи: 17 ноября 1998 (17.11.98) (30) Данные о приоритете: 199800706 13 августа 1998 (13.08.98) EA (71)(72) Заявитель и изобретатель: СИЛАЕВ Александр Иванович [RU/RU]; 103104 Москва, Тверской бульвар, д. 3, кв. 30 (RU) [SILAEV, Alexandr Ivanovich, Moscow (RU)].		(81) Указанные государства: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, евразийский патент (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), европейский патент (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), патент ARIPO (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), патент OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Опубликована С отчётом о международном поиске. С изменённой формулой изобретения и объяснением.

(54) Title: GAME METHOD USING BETS, VARIANTS AND DEVICE FOR REALISING THE SAME

(54) Название изобретения: СПОСОБ ИГРЫ СО СТАВКАМИ (ВАРИАНТЫ) И УСТРОЙСТВО ДЛЯ ЕГО ОСУЩЕСТВЛЕНИЯ

(57) Abstract

The present invention relates to methods and systems for playing games and lottery that involve making bets on information elements from a predetermined game set. This invention essentially involves creating a game set comprising $N > 1$ information elements by creating a set of N non-repetitive information codes in a computer memory and by distributing among the players using communication channels a plurality of signals containing information about the elements of the game set. Each participant makes a bet by selecting one of the elements in the game set. Feedback communication channels are used for transmitting signals for identifying the players and containing information about the bets. The method further involves generating data on the payment of the bets and on the drawing process thereof during the various rounds. The signals comprising information on the bets are recorded in a sequence which remains secret to the players until the round is over and which is used for transmitting them through the feedback communication channels. The drawing of the bets is made according to an iteration analytical method which remains secret to the players until the round is over and which is used for performing a quantitative distribution of the bets according to the elements of the game set. Each iteration is correlated with a sequential signal from the sequence of recorded signals comprising the information code of an element in the game set which is selected by a player as a bet. The method further involves determining the quantity of signals correlated with the information code of each element in the game set during a given round, and checking the observation of the bet drawing conditions. If these conditions are respected, the bets can then be drawn.



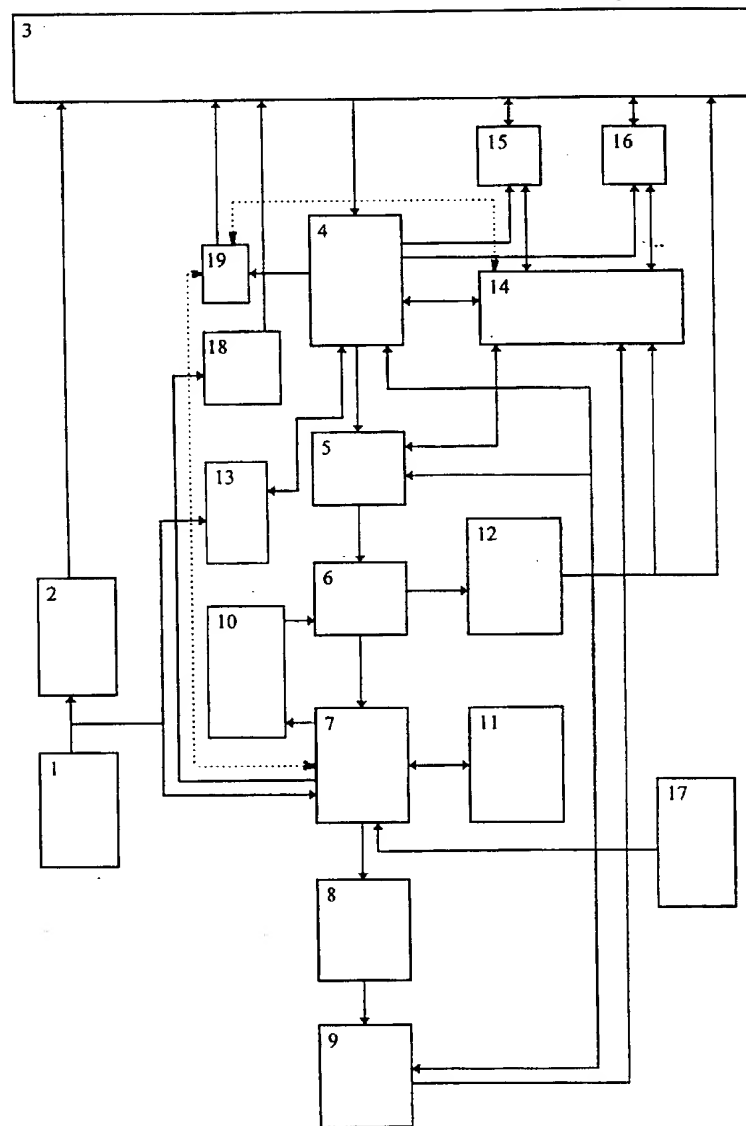


Fig. 1

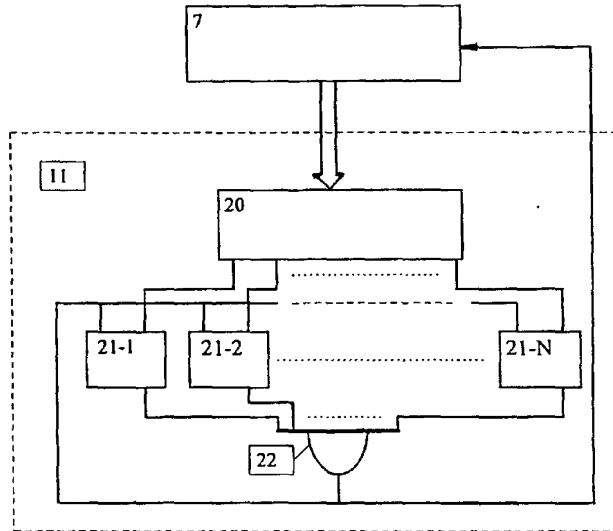


Fig. 2

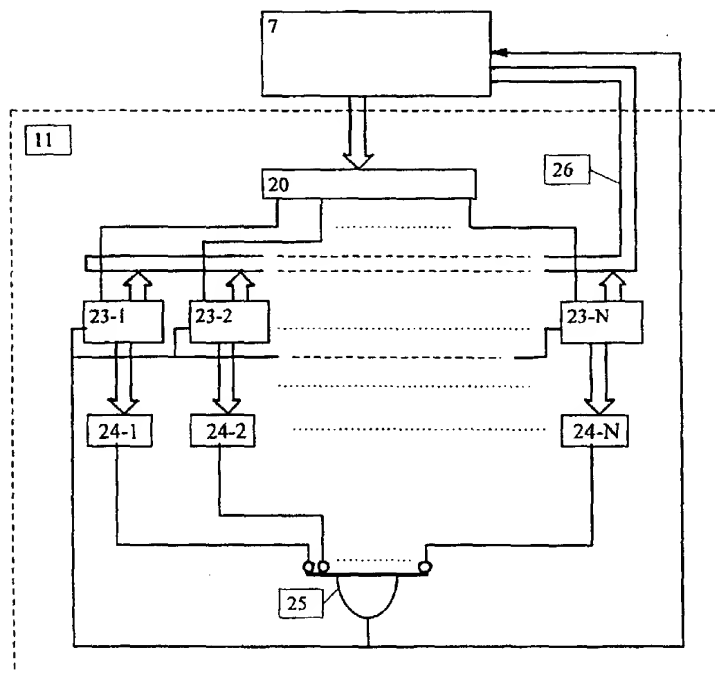


Fig. 3

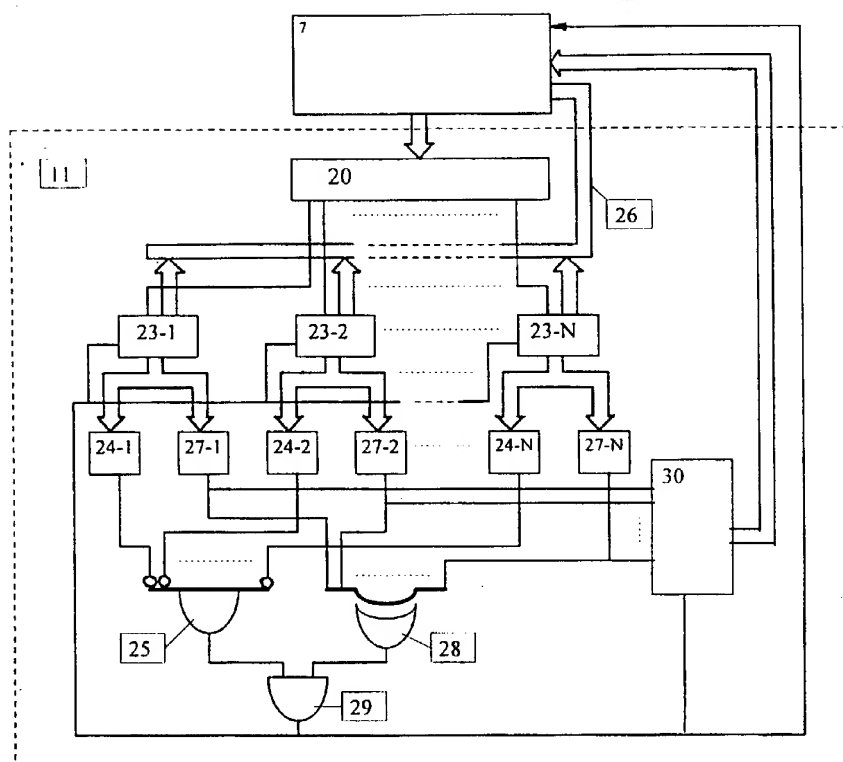


Fig. 4

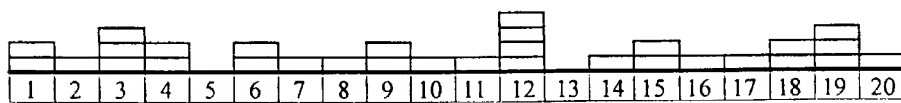


Fig. 6

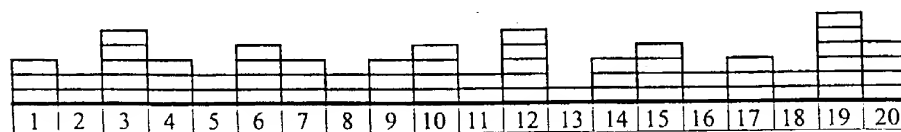


Fig. 7

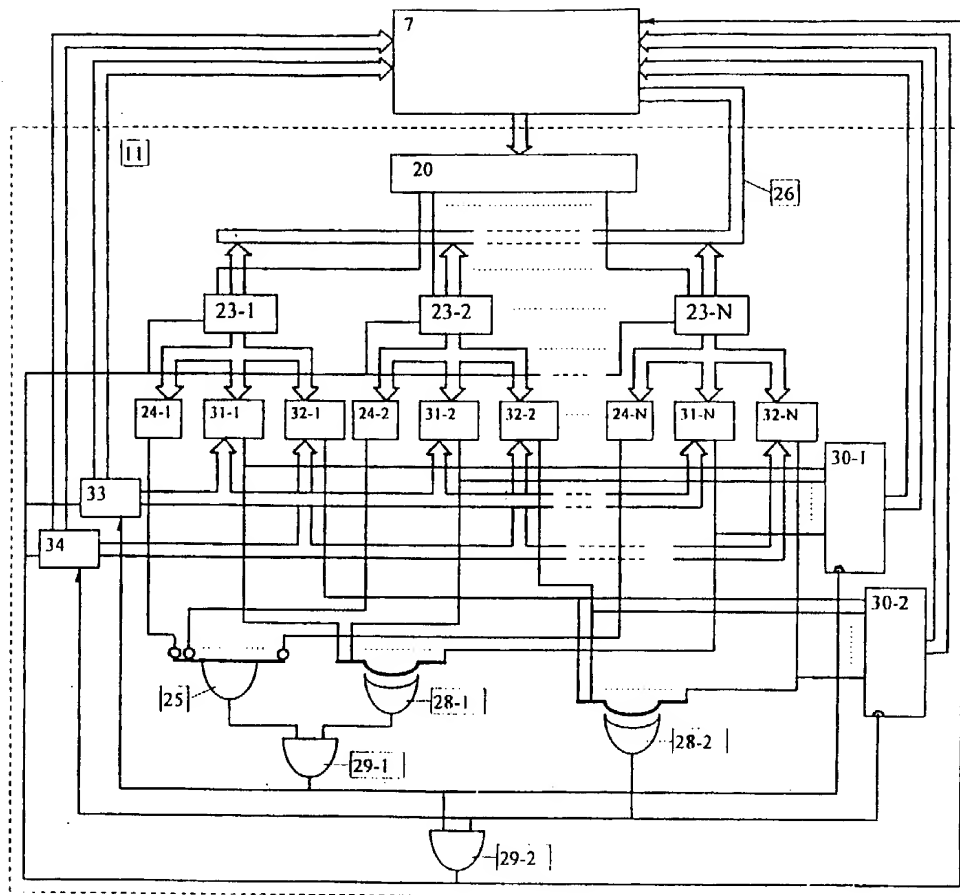


Fig. 5

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	Group Art Unit	
	Examiner Name	

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Game Method Using Bets, Variants and Device for Realising the Same

(Title of the invention)

the specification of which

☐ is attached hereto

OR

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Application Number PCT/RU98/00384 and was amended on (MM/DD/YYYY)

(if applicable).

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Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
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199800706	Europe	08/13/1998	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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or Surname

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(first and middle (if any))

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Inventor's
Signature

Date

Residence: City

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